31 January 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Meeting of the Automap Data Bank
          Study Group

1. Background

     The third session of the Study Group met on 29 January 1969
to discuss the organization and storage of the data bank. Present

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2. Organization

     The data bank consists of two parts, the index and the line
segment files. The index is separate and used as a look-up for the
line segment file. The line segment exists in two formats. The first
version is used for inputing and updating and the second for plotting.
A fuller description follows:

     a. Index - (entry form attached)

         sample -   G102   I   1   500201
                    area   scale
                          feature   seg. no.

     area field - 11 character hierarchal code describing lo-
                  cation of line segment

     feature field - single character describing kind of line
                     segment

     scale field - single character identifying rank or sub-
                   type of feature

     line segment number field - 6 digit number identifying
                   line segment, first digit represents con-
                   tinental area, remainder are random

     (source field) - proposed field of unfixed length refer-
                   ring to input details.

     purpose - Look-up index to line segment files

b. Line Segment File

(1) Format 1

sample - <u>500201</u>   <u>0.12878459E01</u>   <u>0.93669171E00</u>
         seg. no.   radian latitude   radian longitude

              <u>734549N0534007E</u>   <u>100237670</u>
           geographic coordinates   record no.

line segment number field - described in Index above

radian value fields - 40 alphanumeric characters de-
        scribing latitude and longitude

geographic coordinate value fields - 15 alphanumeric
        characters describing latitude and longitude

elevation field - 6 digit number expressing height
        (unused)

record number field - 9 digit number, sequential in
        tens from initial point in each line seg-
        ment

purpose - describes 1 point per 80 character record,
        used to input, update, backup, and generate
        Format 3.

(2) Format 3

sample - <u>500201</u>   <u>0.12878459E01</u>   <u>0.93669171E00</u>
         seg. no.   radian latitude   radian longitude

          <u>500201</u>   <u>0.12874706E01</u>   <u>0.93823157E00</u>
         seg. no.   radian latitude   radian longitude

          <u>500201</u>   <u>0.12871397E01</u>   <u>0.98387903E00</u>
         seg. no.   radian latitude   radian longitude

line segment number field - described in Index above

radian value field - 30 alphanumeric characters de-
        scribing latitude and longitude

        - above elements are repeated 2 more times

purpose - describes 3 points per 108 character record,
        used for plotting.

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c. Point File (entry form attached)

sample - <u>39</u> <u>03</u> <u>TOUGAN</u> <u>T</u> <u>O</u> <u>E201J.9</u>
no. symbol   name   feature   scale   area
symbols
to be
plotted

<u>130400N0030400W</u>   <u>491152</u>
geog. coordinates   accession
number

symbol number field - number of symbols to be plotted

symbol field - symbol to be plotted

name field - 40 alphanumeric characters identifying
point

feature field ("GEN.") - same as Index above

scale field - same as Index above

area field - same as Index above

geographic coordinate value fields - same as Line Segment
File - Format 1 above

accession number - 6 digit sequential field usually re-
lated to line segment numbering system

purpose - provides point data in a 80 character record
compatible with plot program

3. Advantages and Disadvantages

The various features of the data bank were discussed and the
findings are summarized as follows:

feature	advantage	disadvantage
Index:		
overall	independent file faster access	unincorporated
area code	existing, has depth	old code, uneven depth, not dynamic
feature	sufficient	none

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feature	advantage	disadvantage
scale	flexible	none
line segment number	code to continents	not relevant to plot sequence
	unique number	may be insufficient

Line Segment File:

line segment number	code to continents	not relevant to plot sequence
	unique number	may be insufficient
	number change activates pen up/pen down command	repeating of number with each point wasteful
radian value	locational value best adapted to computer usage	unreadable to user
geographic coordinate values	used to manually alter record	unused by computer
format 1 overall	manually alterable	not compact
format 3 overall	reduces processing time	not compact
		manually inaccessible
overall	manually alterable	redundant organization
		not compact

Point File:

symbol number field	alternative numbering scheme	none
symbol field	activates symbol	none
name field	identifies	none
	can be plotted	

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feature	advantage	disadvantage
feature field	see Index above	see Index above
scale field	see Index above	see Index above
area field	see Index above	see Index above
geographic coordinate value fields	readable to user	further processing required
accession number	see Index above	see Index above
overall	readily altered	location values not in radians
		separate submission
		unincorporated

4. Storage

The situation was summarized as follows for each part of the data bank:

Index - on tape, small file, confused state

Small-Scale Line Segment File - both formats on disk, divided into coastline and boundary files.

Other Line Segment Files - all on tape

Point Files - all on cards

5. Problems

The following items have been singled out for further attention:

a. Redundancy of line segment files.

b. Need for automatic ties between the index and the line files when updating.

c. Need for source referencing in the index.

d. The new IHC code should be investigated.

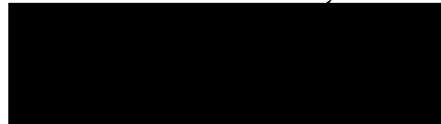e. A need exists to optimize the plotting sequence in small scale plots.

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    f. Greater compaction is needed.

    g. The number of digits in the line segment number field
        may be insufficient.

    h. Frequently used point files should be incorporated in
        the operating system.

6. Next Meeting

The next session will be held on Wednesday, 12 February, at
0900 in Room 1E80. Retrieval and controls will be discussed in what,
hopefully, will be our last background meeting. Working sessions
should begin in the week following.

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Attachments
  A. Automap Data Bank Index Entry
  B. Automap Location Entry Form

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